



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D5799-3

Job Sheet 207473



Part No: D5799-3

Job Qty: 4 pcs

Part Name: Medium Handle



Part Weight: 0 lbs

Job Created: 2/26/20

Due Date: 3/27/20

Type: Stock

Note: URF 2020-525 DWG 5799 REV.A IPP REV:A NEW ISSUE 20.01.15 JV VERF:DD

Ship Via:

POSITIVE RECALL

EFFECTIVE 20/03/20 AUTH: S.M.

Status: RELEASED DATE: Priority: Medium

Job Tracking No:

Created By: Jennifer Renwick

Description:

POSITIVE
RECALL

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Large Fab - Welded Assy	4 pcs	3/27/20	3/27/20	0.00	0.16	Large Fab - 1		
							Large Fab - 10		
							Large Fab - 2		
							Large Fab - 3		
							Large Fab - 4	DAS 24	
							Large Fab - 5	9-89	
							Large Fab - 6		
							Large Fab - 7		
							Large Fab - 8		
							Large Fab - 9		
							Large Fab - 11 (Various)		
							Large Fab - 12		
110	QC 5	4 pcs	3/27/20	3/27/20	0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		



Container No: S273787



Part: D5799-3

Job No: 207473

Serial No/Batch: S273787

Revision: REV.A

Inspector:

Exp Date:

Instructions: Various STC's

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 04/27/20

DAS

40

APR 29 2020

9-89

Plex 3/11/20 3:51 PM Dart, Renwick, Jennifer

120 Packaging 3-1 - Stock - B4B 4 pcs	3/27/20	0.00 0.00	Packaging 3 - 1 - B4B	
			Packaging 3 - 2 - B4B	
			Packaging 3 - 3 - B4B	
			Packaging 3 - 4 - B4B	
			Packaging 3 - 5 - B4B	
			Packaging 3 - 6 - B4B	
			Packaging 3 - 7 - B4B	
			Packaging 3 - 8 - B4B	
			Packaging 3 - 9 - B4B	
			Packaging 3 - 10 - B4B	
			Packaging 3 - 11 - B4B	
			Packaging 3 - 12 - B4B	
			Packaging 3 - 13 - B4B	
			Packaging 3 - 14 - B4B	
			Packaging 3 - 15 - B4B	
			Packaging 3 - 16 - B4B	DAS
			Packaging 3 - 17 - B4B	24
			Packaging 3 - 18 - B4B	9-09
			Packaging 3 - 19 - B4B	
			Packaging 3 - 20 - B4B	
			Packaging 3 - 21 - B4B	
			Packaging 3 - 22 - B4B	
			Packaging 3 - 23 - B4B	
			Packaging 3 - 24 - B4B	
			Packaging 3 - 25 - B4B	
			Packaging 3 - 26 - B4B	
			Packaging 3 - 27 - B4B	
			Packaging 3 - 28 - B4B	
			Packaging 3 - 29 - B4B	
			Packaging 3 - 30 - B4B	
			Packaging 3 - 31 - B4B	
			Packaging 3 - 32 - B4B	
			Packaging 3 - 33 - B4B	
			Packaging 3 - 34 - B4B	
			Packaging 3 - 35 - B4B	
			Packaging 3 - 36 - B4B	
			Packaging 3 - 37 - B4B	
130 QC 21 - SA 4 pcs	3/27/20	0.00 0.00	QC 21 - SA - 21	DAS
			QC 21 - SA - 70	21
			QC 21 - SA - 53	9-09

Part Op 100 - 1- Cut to length 40.33" as per D5799 dwg 2- Deburr
 Descriptions: 110 - QC5- Inspect part completeness to step on W/O
 120 - Identify as per dwg & Stock Location:
 130 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M304TR1.000W.065	304 Round Tube 1.00 X .065W	13.4764 ft (3.3691 ea)	100-Large Fab - Welded Assy-1	S209181

Job Allocations

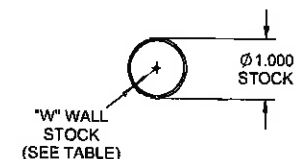
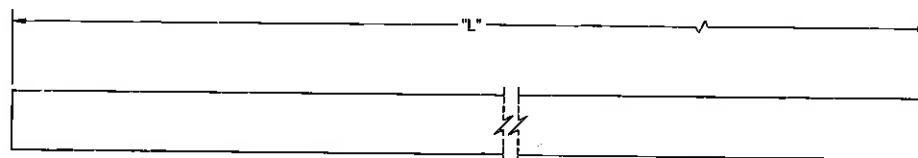
Operation	Component Part	Required	Inventory	Allocated
100-Large Fab - Welded Assy-1	M304TR1.000W.065	13	4	0

Part Specifications

Specifications could not be found.

Plex 3/11/20 3:51 PM Dart.Renwick.Jennifer

P/N	DESCRIPTION	"L"	"W"	WEIGHT (lbs)
D5799-1	SHORT HANDLE	21.33	0.035	0.65
D5799-3	MEDIUM HANDLE	40.33	0.065	2.20
D5799-5	LONG HANDLE	58.83	0.065	3.21



D5799-Y HANDLE
(DERIVED FROM AERO DESIGN P/N 36277-01)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 207473

UNDER REVIEW

URF 2020-525 20.02.20 (NO)

NOTES:

- 1) MATERIAL: 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, 1.00 OD X "W" WALL (SEE TABLE)
PER ASTM A213 OR ASME SA213 OR ASTM A269
REF DART SPEC M304TR
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: SEE TABLE

RELEASED

2020 FEB 19 *q*

APPROVED

DESIGN	ZF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	DRAWING NO. D5799 TITLE HANDLE	REV. A SHEET 2 OF 4 SCALE NTS
DRAWN	ZF			
CHECKED	KPT			
MFG. APPR.	DD			
APPROVED	NO			
DE APPR.	CP <i>q</i>			
DATE	20.01.10			

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NOT TO BE LOANED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Cross tube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> </div> <div> Eng. (Non-AW) <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Water Jet <input type="checkbox"/> Supplier <input type="checkbox"/> Quality <input type="checkbox"/> </div> </div>			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause <div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		FAULT CATEGORY <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Bending <input type="checkbox"/> Crushing <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Mislabeled </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Incomplete/Unclear Instructions <input type="checkbox"/> Drill Holes <input type="checkbox"/> Fit/Function </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain Direction <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Off-set/Set-up </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Outside Tolerance <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Misread </div> </div>			
Other/Details:					



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER POHB046038



Supplier: TWM001-VU
TW Metals
PO Box 933014
Atlanta, GA 31193-3014 USA
Phone: 585 768 5600
Fax: 585 768 5601

Attention: Sullivan, Roseann

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB046038

PO Date: 3/6/20

Due Date: 3/17/20

Purchase Order

Revision:

Revision Date:

Issued By: Lavoie, Chantal
Phone: 613-623-5200 Ext: 242
Fax: 613-632-1053
clavoie@dartaero.com

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
MAR 11 2020

Items

Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1		M304TR0.375W.065			304 Round Tube .375 X .065W MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	3/17/20	48 ft 40	0 ft	48 ft	\$4.60/ft	\$220.80
2		M304TR0.500W.035			304 Round Tube .500 X .035W MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	3/17/20	120 ft 2x 10ft 120ft	0 ft	120 ft	\$5.10/ft	\$612.00



Dart Aerospace Ltd.
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PURCHASE ORDER POHB046038



Items													
Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
3		M304TR0.750W.049			304 Round Tube .750 X .049W MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	3/17/20	408 ft	0 ft	408 ft	\$5.60/ft	\$2,284.80
									400 ft				
									40x				
									10 ft				

Order Notes

Procurement Quality Clauses

- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable). No Raw Metals from China or Soviet Bloc Countries. (DFARS)
- A028 certification of material conformance
- A041 quality management system
- A042 dart notification by supplier
- A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program.

A049 supplier awareness.

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 3/10/20 9:57 AM Dart.Lavole.Chantal



www.abf.com/abf

XXXXXX



E2107

CONSIGNEE COT

An ABF Company

TERMINAL 613-244-3593

04/03/20 13:40

SHIPPER'S NO. C3397823-12757 CEN 03397823

PICK UP DATE 03/11/20 CODE TO 384D PRO NO. POHB016038 NO. OF P.O.'S

SHIPPER T W METALS INC 035938-067A

ROUTING CIN-OWA

FREIGHT BILL NO. 067892457

7640 REINHOLD DR

CINCINNATI OH 45237-2612

CONSIGNEE 544230-0001
DART AEROSPACE LTD1270 ABERDEEN ST
HAWKESBURY ON K5A1A7

PIECES	DESCRIPTION	WEIGHT (LBS.)	RATE	CHARGES
1 CRT	NOTES FOLLOW: *CCN:2504EARS067892457 *TRAN:10827432423790 TOTAL IND PIECES: 1 PIPE, TUBING, OR PIPE OR TUBING FITTINGS, I/S, COMBINED OR NOT COMBINED WITH OTHER MATERIALS, NOI, LOOSE OR IN PAGES, GREATEST DIM EXCEEDING 96 INCHES BUT NOT EXCEEDING 192 INCHES C70 ITEM 052190-03 CROSS-BORDER ADMINISTRATIVE FEE OVER-DIMENSION BASED ON 122 INCHES FUEL SURCHARGE GOODS & SERVICES TAX ABF MEASURED CUBE: 7.060 CUFT TOTALS FREIGHT BILL NO 067892457	243		
1	BT TO	SPB 035938-0607	243 PREPAID	

REVIEW	DATE	PAY	REMIT TO	RB 22149 TAX ABF60355 OZP 452373312 DZP K5A1A7 SPEC. HAND.	PAY THIS AMT INT
CUBE 0007	DELIVERY DUE	MON 03/15	PRIOR PRO DATE	YOUR ACCEPTANCE OF DELIVERY IS SUBJECT TO ABF 111 SERIES TERMS.	
DELIVERY DATE	DRIVER	CONSIGNEE			
E' (CUSTOMER'S SIGNATURE)					

RECEIVED

APR 06 2020

DART AEROSPACE LTD.

1 Bundle
04/06/2020



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 03397823 FROM: CINC PAGE 1

CUST NUMBER: 1203820 NET WGT: 228.065 REQ. DATE: 03/17/20 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 03/12/20
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: POHB046038 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0001 25645 SMLS CD 304/L A269 3/8 OD X .065 WA 20 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	40.000 FT	40.000 FT	40.000 FT ✓	8.606	2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49421446 HT: 554823 PC: 2 CUSTOMER QTY: 40.000 UOM FT
MLT: SWEDEN MFG: CANADA SLB/CL: LOT# 293891 DC

0002 21748 SMLS CD 304/L A269 1/2 OD X .035 WA 20 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	120.000 FT	120.000 FT	120.000 FT ✓	20.851	6

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49421044 HT: 553351 PC: 6 CUSTOMER QTY: 120.000 UOM FT
MLT: SWEDEN MFG: CANADA SLB/CL: LOT# 291251 DC

0003 36861 SMLS CD 304/L A269 3/4 OD X .049 WA 20 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	408.000 FT	400.000 FT	400.000 FT ✓	146.688	20

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO: 49422583 HT: 556561 PC: 20 CUSTOMER QTY: 400.000 UOM FT
MLT: SWEDEN MFG: UNITED STATES SLB/CL: LOT# 297269 DC

PO:



POHB046038

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 03397823 FROM: CINC PAGE 2

CUST NUMBER: 1203820 NET WGT: 228.065 REQ.DATE: 03/17/20 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 03/12/20
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: POHB046038 RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH
0004 74467 SMLS CD 304/L A269 1 OD X .065 WA 20 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	80.000 FT	80.000 FT	80.000 FT ✓	51.920	4

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49409629 HT:551245 PC: 4 CUSTOMER QTY: 80.000 UOM FT
MLT:SWEDEN MFG:UNITED STATES SLB/CL:LOT# 286869 DC

BROKERS LIVINGSTON INTERNATIONAL
ALL ITEM 20 FT MUST BE CUT IN HALF FOR SHIPPING
SHIP VIA ABF FREIGHT
PLEASE NOTE ALL 20 FT TO BE CUT IN
HALF FOR SHIPPING

AREA		TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
BAY 4	REDDICRATE	1.000	243.000	10.0000	122.0000	10	
						CUBIC FT	7.0602
			1.000	243.000			

BY: JG
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED _____

1 PO: *POHB046038*

DATE FILLED _____

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



www.materials.sandvik.com

Sandvik Materials Technology

Product Area Tube

982 Griffin Pond Rd, Clarks Summit, PA US 18411, Ph: 570-585-7600

MATERIAL CERTIFICATE

Cert#: 190017082

Page 1

Plant Location: 982 Griffin Pond Road, Clarks Summit, PA 18411
 Sold To: 790396
 TW METALS - CORPORATE
 EXTON PA
 Customer Order No: M49409629
 Sandvik Order No: 365479/1
 Ship To:
 TW METALS - CHARLOTTE (20)
 CHARLOTTE NC
 Certification Date: 20190606
 Quantity: 800 FT
 Work Order/Lot: 286869

ASTM A511-16, Mechanical Tubing, ASTM A269-15a, ASTM A213-18b
 ASME SA-213, ASME Section II, 2017 EDITION, NACE MR0175/ISO 15156
 3rd Edition 2015-11-23, (Austenitic), NACE MR0103/ISO 17945:2016

Cold Finished BRIGHT ANNEALED Seamless Tube
 Type MT 304/MT 304L/TP304/TP304L

Size: 1.000" X .065" AW

Heat: 551245

Material Manufacturer: Sandvik Materials Technology, USA

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.015	.36	1.57	.028	.009	18.19	10.11
Prod	.012	.36	1.58	.028	.007	18.23	10.14
	Fe	Co	Al	Pb	N		
Heat	.10	.003			.024		
Prod	.10	.003			.039		

Mechanical Tests:

Yield Strength				Tensile Strength		Elongation in %				Reduction Of Area
0.2%		1.0%								%
psi	MPa	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	
46200	318.6	N/A		88000	606.9	52	N/A	N/A	N/A	
45800	315.9			87500	603.4	53				

Hardness Test Results: 72HREW, 75HREW

Domestically manufactured product - Qualifying countries in
 DFARS 225.872-1 do not apply.

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,
 No. samples: 2 Result: Acceptable

Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Tensile Test sample width (1=Full-Size 2=1/2" Strip): 1

This material complies with DFARS 252.225-7001 (2016)

This material does not comply with DFARS 252.225-7008 (2013)

This material complies with DFARS 252.225-7009 (2016)

This material does not comply with FAR 52.225-1 (2009)

This material complies with FAR 52.225-5 (1999)

Country Of Origin: United States

100% Positive Material Identification performed

All material subjected to a final solution annealing heat
 treatment with material at a temperature of 1900 deg. F
 minimum followed by rapid quenching to below 800 deg. F in
 less than three (3) minutes.

The material has not come in contact with Mercury or Mercury
 containing compounds.

No welding has been performed on this material.

Material has been eddy current tested in accordance with

TW METALS
 JUN 19 2019
 ACCEPTED BY

(4)

MATERIAL CERTIFICATE

Cert#: 190017082

Page 2

ASTM A450, ASTM A1016 and is acceptable.
Sandvik Materials Technology manufactured materials meet the former requirements of the United States Department of Defense Regulation Supplement (DFARS) 252.225-7014. Material was manufactured in compliance with Annex 1, Para. 4.3 of the Pressure Equipment Directive (2014/68/EU). Inspection certificate produced in accordance with EN 10204 3.1 (formerly EN 10204 3.1.B).

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in EN 10204:2004, Section 6. Contravention of this notice will be prosecuted to the fullest extent of the applicable law(s).

Material has been manufactured/supplied in accordance with Sandvik Materials Technology Quality Manual-Commercial Products Revision 0 dated Dec. 7, 2017. Quality system has been approved to ISO 9001:2015 (Cert# 10047907, 02JAN18). No unauthorized alterations. The content of this inspection certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the inspection certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. Contravention of this notice will be prosecuted to the fullest extent of the applicable laws.

Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

This is to certify that the contents of this certificate are correct and accurate as contained in Sandvik's records, and that all above test results and operations performed are in compliance with the requirements of the purchase order and the specification(s) listed above.

Electronically Generated Certificate-Valid without signature
John Scherer, Quality Mgr-Tube
10 (NADCSTKBA TW R7) (15) (PT8729)

TW METALS
JUN 19 2019
ACCEPTED BY

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR 1.000W.065 PO / BATCH NO.: PCA3046038
DATE: APR 19 2020 5269181

MATERIAL CERT REC'D: YES
QUANTITY RECEIVED: 80 FT
QUANTITY INSPECTED: 30 FT
QUANTITY REJECTED: —

THICKNESS ORDERED: 1.000 W. 065
THICKNESS RECEIVED: 1.000 W. 065
SHEET SIZE ORDERED:
SHEET SIZE RECEIVED:

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	ASTM A264
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	H/T 551245
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION

ENGINEERING SIGNOFF (if required)

INSPECTED BY: _____

SIGNED OFF BY: _____

DATE: APR 11 9 30AM

DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

~XA^EG^XZ^DGR:Cimg917,9500,'19,000

LIVE 4
M304TR 1.000 W.065

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

B

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSABLE OD TOL. (IN)	PERMISSABLE WALL TOL.
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/4, EXCL.	±0.005	±10%
1 1/4 TO 3 1/2, EXCL.	±0.010	±10%
3 1/2 TO 5 1/2, EXCL.	±0.015	±10%
5 1/2 TO 8, EXCL.	±0.030	±10%

PART NUMBER: M304TR | D.DDD | W.TTT |
OD | WALL

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W.065

RELEASED
09/08/13 MP

B	REFORMAT DWG, ADD SPECS (ZN DB-1), REF PAR 08-020A	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG APPR.			
APPROVED			
DE APPR.			
DATE	08.10.20		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. M304TR	REV. B
TITLE 304/316 ROUND TUBING	SCALE NTS
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